REMARKS

The claims have been revised in several aspects. The "means for electrically interconnecting" in Claim 20 has been changed to "means for programmably electrically interconnecting". Claim 25 has been amended to change the "pads" recited at the end of the last sub-paragraph of the claim to "said pads" to be consistent with the usage of "said pads" at the end of the first sub-paragraph of the claim. Claims 29, 37, 40, 42, and 57 have been amended to provide that the recited programmable integrated circuits are programmable by way of their "conductive leads".

The Examiner alleges that Claims 1 - 77 are pending. However, Claims 1 - 19 were cancelled in the transmittal letter by which this application was filed. Accordingly, Claims 20 - 77 are now pending.

Claims 20 - 77 have been rejected under the doctrine of obviousness-type double patenting as being "patentable", presumably the Examiner means "unpatentable", over the invention of Claims 1 - 17 of U.S. Patent 5,377,124. The Examiner has indicated that the double-patenting rejection could be overcome by submitting a suitable terminal disclaimer.

A determination has not yet been made as to what subject matter is allowable in the present application but for double-patenting considerations. As a consequence, Applicant's attorney is not presently in a position to determine whether to submit the suggested terminal disclaimer or to contest the double-patenting rejection. For this reason, it is respectfully requested that the double-patenting rejection be placed in abeyance until all of the otherwise allowable subject matter is determined.

Claims 20 - 77 have been rejected under 35 USC 102(e) as anticipated by Chang et al ("Chang"). This rejection is respectfully traversed.

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Preliminarily, it is not clear what part, if any, of Chang constitutes prior art to the present claims. The instant application is a continuation of parent U.S. patent application Ser. No. 08/171,992, filed 22 December 1993, which is a continuation of grandparent U.S. patent application Ser. No. 07/410,194, filed 20 September 1989. As originally filed, the specifications of the present, parent, and grandparent applications are identical. Under 35 USC 120, the present application is thus entitled to 20 September 1989 as its effective U.S. filing date.

Chang was filed 30 May 1991 and claims to be a continuation-in-part of parent U.S. patent application Ser. No. 07/438,325, filed 16 November 1989, which (apparently) claims to be a continuation-in-part of grandparent U.S. patent application Ser. No. 07/314,817, filed 22 February 1989. The cover sheet of Chang indicates that both Chang's parent and grandparent applications are abandoned.

The 30 May 1991 actual filing date of Chang is later than 20 September 1989, the effective filing date of the present application. Chang's 30 May 1991 actual filing date is thus too late to qualify Chang as prior art to the present claims. Likewise, the 16 November 1989 filing date of Chang's parent application is later than 20 May 1989. Consequently, the 16 November 1989 filing date of Chang's parent is also too late to qualify Chang as prior art to the present claims.

The 22 February 1989 filing date of Chang's grandparent application does precede the 20 September 1989 effective filing date of the present application. Accordingly, it is possible that part of Chang is disclosed in Chang's grandparent and qualifies as 35 USC 102(e) prior art to the present claims. However, Applicant's attorney does not have copies of Chang's parent and grandparent applications and thus cannot determine what part of Chang, if any, is carried forward from Chang's grandparent and might constitute prior art to the present claims.

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Also, the Court of Customs and Patent Appeals held in In re Wertheim (CCPA 1981) 209 USPQ 554 that a reference patent in a continuation-in-part situation is entitled to a remote filing date only to the extent that the disclosure in the remote patent supports claims that actually appear in the reference patent. See the discussion of Wertheim presented in Chisum, Chisum on Patents (Matthew Bender), March 1997, pages 3-125 -- 3-132 and supplement page 145, copy enclosed. Lacking copies of Chang's parent and grandparent applications, Applicant's attorney is unable to determine whether any part of Chang's disclosure, to the extent that it is carried over from Chang's grandparent, meets the Wertheim standard.

For the preceding reasons, the status of Chang as 35 USC 102(e) prior art to the present claims is unclear. If the Examiner decides to maintain Chang as a reference against any of the present claims, it is respectfully requested that the Examiner provide Applicant's attorney with copies of Chang's parent and grandparent applications, including any evidence needed to clearly identify those materials as copies of Chang's parent and grandparent.

Substantively, each of independent structure Claims 20, 23, 29, 37, 40, 42, 57, and 72 recites at least one programmable interconnect chip ("PIC") or programmable integrated circuit (also "PIC") having conductive leads that are programmably interconnectable for programmably interconnecting electronic components connected to a substrate (such as a board or printed circuit board). To the extent that this programmable interconnect capability may not have been totally clear from the prior wording of structure Claims 29, 37, 40, 42, and 57, these five independent claims have been amended to recite that the PICs are programmable through their conductive leads. Structure Claim 20 has been revised in a similar manner. Each of independent method Claims 43, 50, 53, and 65 likewise recites that the conductive leads of at least one PIC are programmable interconnectable for programmably interconnecting electronic components connected to a substrate.

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Chang does not disclose any programmable interconnect chip or programmable integrated circuit having conductive leads that are programmably interconnectable for programmably interconnecting electronic components mounted on the substrate of Chang's multichip module. Insofar as any part of Chang is prior art to the present claims, Chang therefore does not anticipate any of independent Claims 20, 23, 29, 37, 40, 42, 43, 50, 53, 57, 65, and 72.

In failing to disclose any PIC, Chang specifically lacks the programmably interconnecting means of Claims 20, 23, 37, and 42. Likewise, Chang lacks the computer/PIC interface recited in Claims 29, 43, 50, and 53. Furthermore, Chang lacks the bus system recited in Claim 72 for electrically interconnecting multiple PICs.

Chang also fails to disclose the limitation of each of Claims 20, 23, 37, 42, and 50 that at least one of the conductive leads be divided into two or more conductive segments. Chang lacks the buses recited in Claims 29 and 57. Chang does not meet the limitation of Claim 40 that the "conductive traces on" the "substrate have a standard configuration independent of the electronic components to be mounted on said substrate and the electrical function to be implemented by said electronic components when selectively interconnected by said at least one programmable integrated circuit".

The foregoing remarks show that everyone of independent Claims 20, 23, 29, 37, 40, 42, 43, 50, 53, 57, 65, and 72 differs from Chang in one or more ways. Inasmuch as Chang does not disclose or suggest a PIC, Chang does not make any of these twelve independent claims obvious. Insofar as any part of Chang constitutes prior art to the present claims, Claims 20, 23, 29, 37, 40, 42, 43, 50, 53, 57, 65, and 72 are thus patentable over Chang.

Claims 21, 22, 24 - 28, 30 - 36, 38, 39, 41, 44 - 49, 51, 52, 54 - 56, 58 - 64, 66 - 71, and 73 - 77 variously depend (directly or indirectly) from independent Claims 20, 23, 29, 37,

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40, 42, 43, 50, 53, 57, 65, and 72. To the extent that any part of Chang is prior art to the present claims, the dependent claims are allowable over Chang for the same reasons as the independent claims.

In summary, Applicant's attorney has requested that the double-patenting rejection be placed in abeyance until all of the otherwise allowable subject matter has been determined. The extent to which Chang constitutes prior art to the present claims is not presently clear. Insofar as any part of Chang constitutes prior art to the present claims, Claims 20 - 77 have been shown to be patentable over Chang. Accordingly, it is respectfully requested that Claims 20 - 77 be declared to contain allowable subject matter subject to resolution of the double-patenting issue.

Please telephone Applicant's attorney at 408-453-9200, ext. 1371, if there are any questions.

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner of Patents and Trademarks, Washington, DC 20231,

on July 28, 1997.

Ronald J. Meetin — 28 July 1997

Attorney for Applicant(s) — Date of Signature

Respectfully submitted,

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